Clmspto
Tplunkett
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1.   A method for checking of data, **characterized** in that

- a first reference value (204) is calculated (203) at least partly based on a first error check value (205) calculated from the data and a first authentication value (202) for the data.

2.   A method according to claim 1, **characterized** in that when checking the data

- a second error check value (303) is calculated from the data,

- a second authentication value (302) is derived for the data,

- a second reference value is calculated at least partly based on a first and a second value from the set of said second error check value, said second authentication value and said first reference value,

- said second reference value is compared (305) with a third value from the set of said second error check value, said second authentication value and said first reference value.

3.   A method according to claim 1, **characterized** in that the data is in the form of packets to be sent from a transmitter to a receiver and said first reference value is added to the packet to be sent.

4.   A method according to claim 3, **characterized** in that the data is to be sent in a cellular system.

5.   A method according to claim 1, **characterized** in that said calculation is performed with the exclusive-OR function.

6.   A method according to claim 2, **characterized** in that said first and second authentication values (202; 302) are derived at least partly based on a secret key.

7.   A method according to claim 3, **characterized** in that said first authentication value (202) is derived at least partly based on a packet number.

8.   A method according to claim 3, **characterized** in that said first authentication value (202) is derived at least partly based on the direction of the packet to be transmitted.

9.   A method according to claim 2, **characterized** in that said first and second error check values are CRC values (205; 303; 304).

10.   A method according to claim 2, **characterized** in that said first and second authentication values are calculated at least partly based on the data.

11.   A transmitter, **characterized** in that the transmitter comprises

- means for deriving an authentication value (202) from the data to be transmitted (201),

- means for deriving an error check value (205) from the data to be transmitted (201) and

- means for combining said authentication value (202) and said error check value (205) with a logical function for producing a first reference value (204).

12.   A transmitter according to claim 11, **characterized** in that said logical function is exclusive-OR (203).

13. A receiver for receiving data having means for checking received data, **characterized** in that the receiver comprises

- means for deriving a first reference value (308) from the received data,

- means for calculating an error check value (303) from the received data,

- means for deriving an authentication value (302) for the received data,

- means for calculating a second reference value at least partly based on a first and a second value from the set of said error check value, said authentication value and said first reference value, and

- means for comparing said second reference value with a third value from the set of said error check value, said authentication value and said first reference value.

14. A receiver according to claim 13, **characterized** in that the receiver is arranged to carry out the logical function exclusive-OR (203).

15. A station, comprising a transmitter and a receiver, **characterized** in that the transmitter comprises
- means for deriving a first authentication value (202) from the data to be transmitted (201),

- means for deriving a first error check value (205) from the data to be transmitted (201) and

- means for combining said first authentication value (202) and said first error check value (205) with a logical function for producing a first reference value (204),

and the receiver comprises

- means for deriving a first reference value (308) from the received data,

- means for calculating a second error check value (303) from the received data,

- means for deriving an authentication value (302) for the received data, this authentication value being a second authentication value,

- means for calculating a second reference value at least partly based on a first and a second value from the set of said second error check value, said second authentication value and said first reference value, and

- means for comparing said second reference value with a third value from the set of said second error check value, said second authentication value and said first reference value.

16.   A station according to claim 15, **characterized** in that the mobile station (101) is arranged to carry out the logical function exclusive-OR (203).

(currently amended)

17.   A station according to claim[s] 15 [or 16], characterized in that the station is a mobile station (101).

(new)

18.   A station according to claim 16, characterized in that the station is a mobile station (101).